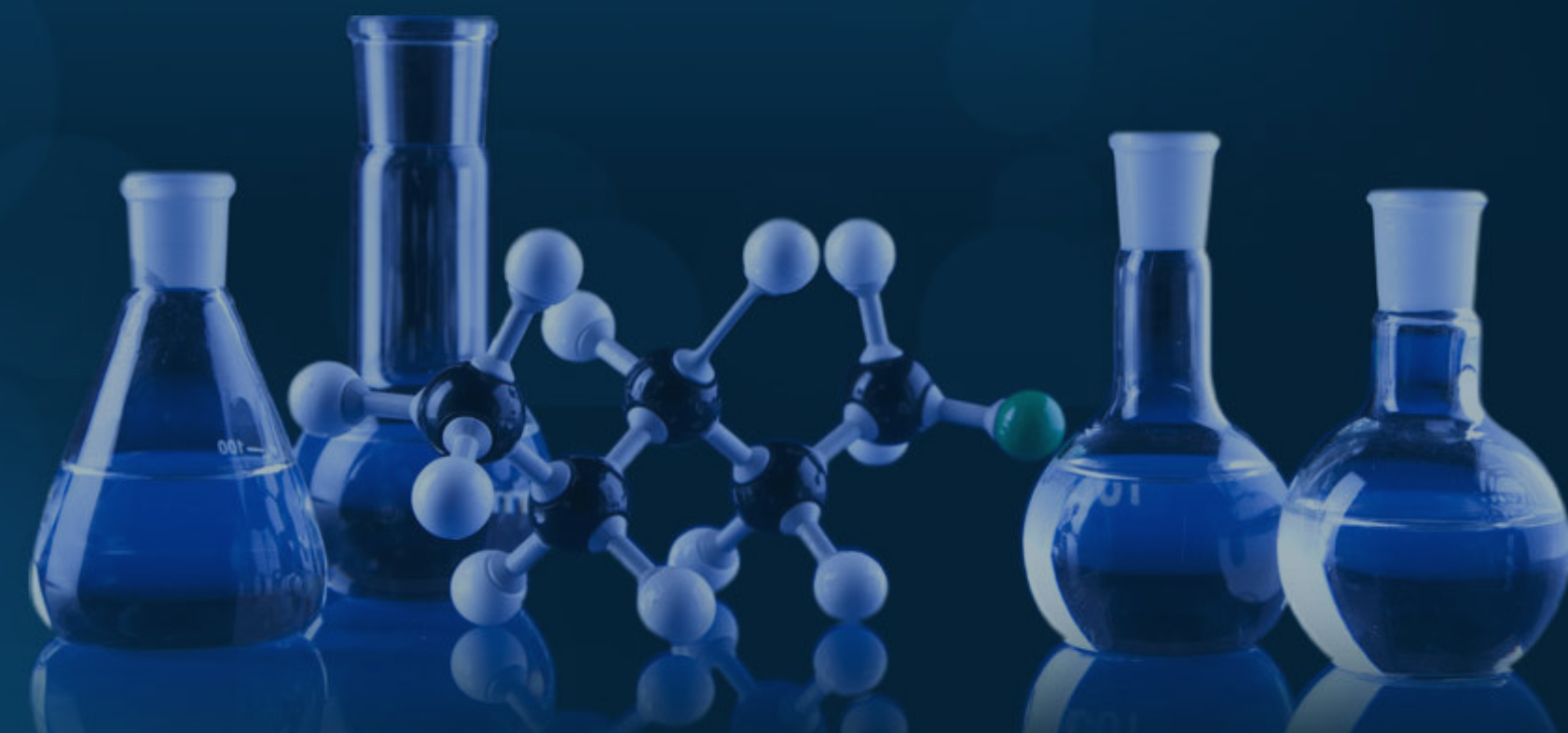




## ARL is an Authority on Nutrition and the Science of Balancing Body Chemistry Through Hair Tissue Mineral Analysis!

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# Alzheimer's Disease

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Alzheimer's disease is a devastating and very costly illness. It already affects approximately 6.8 million Americans. Nutritional balancing programs based on hair mineral analysis may be helpful in improving the symptoms associated with Alzheimer's disease.

## Identifying Alzheimer's

Alzheimer's disease is characterized by the death and disappearance of brain cells and the appearance of neurofibrillary tangles in the brain. Also present is a feature identified as senile plaques containing amyloid tissue.

Symptoms usually begin with short-term memory loss, and at times other mental disorders including depression, anxiety, delusions, odd behaviors and hallucinations. Progression may be slow over a 10 year or more period of time.

Alzheimer's disease may be confused with Parkinson's disease, advanced MS, vascular dementia, Creutzfeldt-Jakob disease, brain tumors, depression, hypothyroidism, alcoholism, liver toxicity, drug reactions, B<sub>12</sub> deficiency or other nutrient deficiencies. Some individuals may have several of these conditions. It is important to consider these possible causes of the symptoms of Alzheimer's disease.

## Causes of Alzheimer's

While no single cause has been identified, nutritional aspects are very important. Here are some of the major findings related to nutrition:

**Aluminum and mercury:** The brains of those with Alzheimer's accumulate more aluminum than normal brains. Aluminum is neurotoxic and may replace vital minerals such as magnesium in key enzyme binding sites.

The amount of aluminum in the environment and food supply has increased dramatically due to the widespread use of antiperspirants, anti-acids, aluminum cans and aluminum added to salt and drinking water. Mineral analysis often reveals excessive aluminum in a large percentage of the population.

Drinking fluoridated water increases the absorption of aluminum. Levels of greater than 1 ppm of fluoride have only been added to water supplies in the past 50 years. Today, fluoride is not only found in many water supplies. Foods which are processed with water, fruit juices and other prepared foods also often contain high levels of fluoride. Digestive dysfunctions such as leaky gut syndrome and others may enhance the absorption of aluminum.

Mercury and other heavy metals are also neurotoxic and may play a role. Mercury is widespread in the environment due to the use of amalgam dental fillings and environmental contamination of fish and some water supplies. These metals accumulate in the brain and interfere with normal brain metabolism.

**Folic Acid, Lycopene and a Positive Self-image:** In the book, *Aging with Grace*, 600 Franciscan nuns were involved in a long-term study of Alzheimer's disease. Those with low levels of folic acid and lycopene had a higher incidence of Alzheimer's disease. Folic acid is often deficient in the diet and current regulations prevent significant supplementation of folic acid in vitamin supplements. Lycopene is an anti-oxidant. The study also found those with a better self-image had less Alzheimer's disease.

**L-Carnitine:** This amino acid is required for mitochondrial transport of long-chain fatty acids. It is naturally found in animal proteins and can be made in the body from lysine and methionine. Vitamin C, niacin, B<sub>6</sub> and iron are also required for its synthesis. There is continuing research being done with acetyl-L-carnitine which shows evidence of slowing the progression of Alzheimer's disease.

**Anti-oxidants:** Studies have shown that Alzheimer's patients have significantly lower levels of vitamin E, lycopene and B-carotene than controls. Low levels of anti-oxidant nutrients may contribute to nervous system damage.

**Copper and Zinc:** In June, 2001, researchers at Massachusetts General Hospital reported that copper buildup in the brain may contribute to Alzheimer's disease. Excessive copper can damage protein structures by affecting disulfide bonds and perhaps by acting as an anti-oxidant.

Zinc deficiency may contribute to copper excess. Studies also show that zinc can inhibit amyloid-induced production of neuronal filaments. Zinc deficiency is widespread in the population due to depleted soils and refined food diets. Copper excess and zinc deficiency are common on mineral analyses.

**Vitamin B<sub>12</sub>:** B<sub>12</sub> deficiency is common in Alzheimer's patients and can cause similar symptoms. Serum B<sub>12</sub> is not always a reliable guide.

**Energy production:** Mutated mitochondrial DNA is associated with Alzheimer's disease. Enhancing mitochondrial function and cellular energy production through nutritional balancing may be helpful for some Alzheimer's patients. Nutrients that enhance energy production include B-complex vitamins, coenzyme Q<sub>10</sub>, NADH and vital minerals.

**Essential Fatty Acids:** It is theorized that essential fatty acid deficiency may play a role by affecting cell membrane permeability and prostaglandin synthesis in the brain.

**Estrogen:** Adequate estrogen appears to protect women from Alzheimer's disease. Women can take estrogen supplements, or better yet, improve their adrenal gland activity to produce adequate estrogen.

**Botanicals:** A number of herbs have shown promise in helping circulation, blood vessel integrity and energy production in the brain. Among the most common are ginkgo biloba, Gotu kola, Salvia officinalis, Melissa officinalis, periwinkle and others.

**Oxygen Therapy:** Oxygen deficiency in the brain may contribute to cell death. Deep breathing, exercise and therapy with oxygen such as EWOT (Exercise With Oxygen Therapy) may be helpful.

## The Stress Connection

Prolonged, excessive levels of cortisone and other stress hormones have been shown to cause brain cell death. Excess cortisol production may be indicated on a hair analysis by a fast oxidation rate, or more commonly, a low ratio of sodium to potassium. Any of the nutritional deficiencies and toxic metal excesses discussed above also place extra stress on the body.

## Nutritional Balancing and Alzheimer's

We do not find one particular mineral imbalance in patients with Alzheimer's disease. Many have elevated toxic metals, low energy patterns and vital mineral deficiencies.

Nutritional balancing programs help reduce stress by balancing the oxidation rate, improving the adequacy of the diet, reducing toxic metal levels and replenishing vital minerals, vitamins and other nutrients.

Adding botanicals such as ginkgo biloba and other methods such as oxygen therapy can further refine and enhance a nutritional balancing program.

## References

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